KIKLEVICH, A.G.

Technology of the preparation of potato chips (from "La Revue de la Conserve de France et de l' Union Francaise," no.1, 1959). Kons.i ov.-vrom. 15 no.2:42-43 F '60. (MIRA 13:5)

(Potato chips)

KIKLEVICH, A.G., podpolkovnik

Tectical training of the flight personnel in antisubmarine aviation. Mor.sbor. 46 no.2:56-59 F '63. (MIRA 16:2)
(Air warefare) (Submarine boats)

KOROLEV, V.A., inzh.; KIKLEVICH, K.A., inzh.

Mechanization of the removal and conveying of scrap metals.
Mekh. i avtom. proizv. 19 no.7:18-24 Jl '65. (MIRA 18:9)

USSR/Engineering Apr 48
Conveyors
Coal

"The Problem of a Conveyor Motor for the Coal Industry," N. A. Kiklevich, Engr, Donets Sci Res Coal Inst, 2 p

"Vest Elektro-Prom" No 4

Reply to Engr A. N. Golubentsev's article which appeared in "Vest Elektro-Prom" No 3, 1947. Agrees that rotor shaft should be redesigned and suggests use of chrome-nickel and chrome-molybdenum steels. Comments on inaccuracies in air gaps in MA-173-1/4 K

[redacted] 6/49T3

USSR/Engineering (Contd) Apr 48

and MA-173-2/4 F motors. Accurate readings cannot be taken, since explosion-proof motors have no openings for feelers. However, there have been many cases of rotor interfering with stator after 1-3 months work, with bearing clearances not over 0.2 mm and no residual bending in rotor shaft.

6/49T3

KIKLEVICH, N. A.

[redacted]

KIKLEVICH, N, A.

PA 20/49T84

USSR/Mining Methods
Motors, Electric

Sep 48

"Some Measures for Improving the Performance of Mine Electric Motors," N. A. Kiklevich, Cand Tech Sci, DonUGI, 3¼ pp

"Ugol'" No 9 (270)

Treats subject under the following: (1) avoidance of contact between rotor and stator, (2) improvement of lubrication, and protection of windings from damage due to lubricants, (3) prevention of fracture of rotor shafts, (4) improvement of windings, and (5) other defects.

[redacted]

20/49T84

USSR/Electricity - Motors, Induction Dec 49
Gaps, Air

"Influence of an Uneven Air Gap on the Characteristics and Operational Reliability of Induction Motors," N. A. Kiklevich, Cand Tech Sci, Donets Sci Res Coal Inst, 5 pp

"Elektrichestvo" No 12

Explains nature and extent of effect of eccentricity on starting characteristic M= f(n) and on operational reliability of electric motors. Gives data on magnitude of eccentricity in new and existing mine explosion-proof electric motors.

157T18

USSR/Electricity - Motors, Induction (Contd) Dec 49

Suggests measures to reduce eccentricity. Includes three tables and 8 diagrams. Submitted 28 Jun 49.

157T18

KIKLEVICH, N. A.

PA 161T37

USSR/Electricity - Power Economy, Electric Apr 50
Coal Mines

"Specific Electric Power Consumption in Coal Mining by the Donbass Combines," N. A. Kiklevich, Engr, Donets Sci Res Inst, 1¼ pp

"Prom Energet" No 4

Concludes specific power consumption in Donbass Combine coal mining decreases with increase in feed rate. Greatest productivity obtained with MAD-191/11-type electric motors operating at feed rate of 0.54 m/sec. Steady operation possible at this rate on networks if voltage applied at

161T37

USSR/Electricity - Power Economy, Electric Apr 50
(Contd)

terminals of loaded motor can be maintained at 390-400 v when rated voltage is 380. Further study needed.

161T37

KIKLEVICH, N. A.

PA 196T36

USSR/Electricity - Motors, Electric Aug 51

"Simplified Calculations of the Starting and Maximum Torques of Squirrel-Cage Motors Supplied From a Low-Power Network," N. A. Kiklevich, Cand Tech Sci, Stalino

"Elektrichestvo" No 8, pp 82-85

From the expression for the power transmitted on the ac line to the energy sink, derives simplified formulas which permit one to det actual values of starting and max torques of squirrel-cage motors fed from a low-power line according

196T36

USSR/Electricity - Motors, Electric (Contd) Aug 51

to the voltage loss in the network when the motor operates with normal load. Submitted 13 Mar 51.

196T36

Science Abstracts
B Sect. B.

Machines 621.313

621.313.333.042.4 : 621.317.39

2373. **Testing the air gap regularity in asynchronous motors having their active steel outer surface not exposed.** N. A. KIKLEVICH. *Prom. Energ.*, No. 10, 8–10 (1951) *In Russian.*

Describes two methods of checking air-gap eccentricity applicable to the maintenance of a range of similar machines, e.g. coal mining motors, first when the outside carcase is not in contact with the active steel or has a ribbed periphery, and secondly, for precisely the opposite conditions. The first employs a test rotor, whose construction is described, equipped with two search coils energized in turn from a suitable voltage supply. The coil current variation whilst turning the rotor is measured, and the gap eccentricity determined from an empirical graph having as its base the ratio of maximum to minimum current value. The second method employs an iron-cored solenoid connected to a millivoltmeter, the solenoid being placed in contact at successive points around the outer periphery of the motor. The stator winding of the motor under test is supplied from the rotor winding of another asynchronous machine of slip not exceeding 2%. As the motor carcase has no effect on l.f. magnetic fields, the instrument needle will oscillate at stator current frequency. Its maximum and minimum swings are observed and the gap eccentricity obtained from a curve similar to the one in the first method. The author lists the precautions to be taken to ensure results containing > 10% error. I. MCKERROW

USSR/Electricity - Electric Drive Apr 52

"Electric Drive of the Donbass-Type Coal Combine," N. A. Kiklevich, Cand Tech Sci, Donets Sci Res Coal Inst

"Elektrichestvo" No 4, pp 24-32

Summarizes exptl studies of the operating conditions of the main elec motor (a MAD-191/11) in Donbass-type coal combines. Cites a method for establishing the most important parameters of the main motor from the assigned productivity of the combine, its load, and operating conditions. Submitted 12 Jan 52.

228T50

KIKLEVICH, N. A.

PA 228T50

KIKLEVICH, N. A.

USSR/Electricity - Induction Motors Mar 53

"Repair and Design of Electric Motors, Series MA-140," Engr N. A. Kiklevich

Prom Energet, No 3, pp 18-19

States that breakdowns of MA-140 (produced by "Krasnyy Oktyabr'" Plant) elec motors are usually due to 1) short-circuits in end sections and spark-over to body of stator windings, 2) increasing non-uniformity of air gap between rotor and stator. Mentions rewinding procedures used at "Kuybyshevugol'" Trust, use of PKZ-2 elec probe (produced by Khar'kov Plant of Mine-Surveying Instruments, Min of Coal Industry) for checking air gap; describes simple method for on-the-spot removal of winding shields.

248T37

PA 248T37

248T37

KIKLEVICH, N.A., kand. tekhn. nauk.

Equipment for the mechanization and automatization of railroad waste pile dumping operations. Sbor. DonUGI no.15:79-90 '56.
(Mine railroads) (Dumping appliances) (MIRA 10:11)

KIKLEVICH, N.A.

KIKLEVICH, N.A., kand.tekhn.nauk.

The main characteristics of electric motor drives for channeling machines and cutter-loaders. Elektrichestvo no.12:26-31 D '57. (MIRA 10:12)

1.Konetskiy nauchno-issledovatel'skiy ugol'nyy institut.
(Coal mining machinery)
(Electric driving)

KIKNEVICH, N.A., kand.tekhn.nauk

Operating conditions of working parts and electric drives in coal cutters and cutter-loaders. Sbor.DonUGI no.16:3-45 '58.
(MIRA 11:11)

(Coal mining machinery) (Electric driving)

KIKLEVICH, N.A., kand.tekhn.nauk

Operating conditions of and output to be expected from "Donbass" cutter-loaders. Sbor.DonUGI no.16:47-92 '58. (MIRA 11:11)
(Coal mining machinery)

KIKLEVICH, N.A., kand.tekhn.nauk

Use of powerful motors for cutter-loaders in the electric network of a mine section. Ugol' Ukr. 4 no. 11:9-12 N '60.
(MIRA 13:12)

1. Donetskiy ugol'nyy institut.
(Electricity in mining) (Coal mining machinery--Electric driving)

KIKLEVICH, N.A., kand.tekhn.nauk; PETROV, Ya.V., inzh.

In regard to A.S. Sergeev's article "Designing of network sections in mines according to the starting conditions." Prom. energ. 15 no.12:40-44 D '60. (MIRA 13:12)

1. Donetskiy nauchno-issledovatel'skiy ugol'nyy institut. (for Kiklevich). 2. Tomskiy politekhnicheskiy institut (for Petrov).
(Electricity in mining)

KIKLEVICH, N.A., kand.tekhn.nauk

Possibility of increasing the torque of electric motors used for driving cutters and cutter-loaders. Elektrichestvo no.9:41-44 S '61. (MIRA 14:9)

1. Donetskiy nauchno-issledovatel'skiy ugol'nyy institut.
(Mining machinery--Electric driving)

KIKIEVICH, N.A.; SIMONCHAK, V.T.; FOMENKO, D.I.; PLOSKOGOLOVYY, Yu.F.

Some shortcomings of the magnetic PMV-1365A starter for 660 voltage. Ugol' 37 no.3:32-33 Mr '62. (MIRA 15:2)

1. Donetskiy nauchno-issledovatel'skiy ugol'nyy institut.
(Electricity in mining) (Coal mining machinery)

GRANKOVSKIY, Vladimir Fomich; KIKLEVICH, Nikolay Antonovich; SIMONCHAK, Vasiliy Trofimovich; FOMENKO, Dmitriy Ivanovich; SAPILOV, A.V., otv. red.; BELOV, V.S., red. izd-va; SABITOV, A., tekhn. red.; OVSEYENKO, V.G., tekhn. red.

[Electric equipment with 660 volt rating for mines]Rudnichnoe elektrooborudovanie na napriazhenie 660 v. [By]V.F.Grankovskiy i dr. Moskva, Gosgortekhizdat, 1962. 119 p. (MIRA 15:8)
(Mining machinery—Electric driving)

KIKLEVICH, N.A., kand.tekhn.nauk (Donetsk); BELOVIDOV, B.S., doktor tekhn.nauk, prof. (Novocherkassk); IVANOV, A.A., doktor tekhn. nauk (Dnepropetrovsk)

Electric drives and automatic control in the mining industry. Elektrichestvo no.1:84-91 Ja '63. (MIRA 16:2)

1. Institut gornogo dela AN UkrSSR (for Kiklevich).
(Mining machinery--Electric driving)

KIKLEVICH, N.A. (Donetsk)

Determination of the limiting moments of the asynchronous motors of cutter-loaders in mine networks. Elektrichestvo no.4:92 Ap '63. (MIRA 16:5)

(Coal mining machinery--Electric driving)

KIKLEVICH, N.A., kand. tekhn. nauk

Analysis of the basic principles and the efficiency of automating the operating conditions of coal mining machinery. Sbor DonUGI no.3:3-31 '63.

Regulating cutting speeds during rapid operating conditions of a coal cutter-loader. Ibid.:31-38

Efficient transmission parameters of the feed of coal cutter-loaders. Ibid.:39-44

Calculating transmission parameters in two-mass systems with flexible connections. Ibid.:44-49 (MIRA 17:10)

KIKLEVICH, Nikolay Antonovich; KIKLEVICH, Yuriy Nikolayevich

[Operating conditions of coal cutter-loader actuating mechanisms and drive] Rezhimy raboty ispolnitel'nykh organov i privoda ugol'nykh kombainov. Moskva, Nedra, 1965. 135 p. (MIRA 18:8)

KIKLEVICH, N. I.

Kiklevich, N. I. - "Selection of bushings for electric motors at mining operations sites," Raboty DONUGI [Donetskiy nauch.-issled ugol'nyy in-t], symposim 4, 1948, p. 54-59

So: U-3566, 15 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 13, 1949)

KIKLEVICH, Nikolay Antonovich; KIKLEVICH, Yuriy Nikolayevich

[Operating conditions of coal cutter-loader actuating mechanisms and drive] Rezhimy raboty ispolnitel'nykh organov i privoda ugol'nykh kombainov. Moskva, Nedra, 1965. 135 p. (MIRA 18:8)

PESEK, Z.; [illegible], J.

... orthopedist and rehabilitation. (Esperiences from the field).
Acta chir. orthop. traum. Cech. 32 no.4:345-347 Ag '65.

1. Rehabilitacni oddeleni Obvodniho ustavu narodniho zdravi v Klatovech (vedouci MUDr. Z. Pesek).

LESZCZYSKI, Stanislaw; KIKLINSKI, Antoni; NAJGRAKOWSKI, Michal; GRZESZCZAK, Jerzy

Spatial structure of Polish industry in 1956. Przegl geogr Suppl. to 32:139-147 '60. (EEAI 10:4)

1. Polish Academy of Sciences, Institute of Geography, Department of Industrial Geography, Warsaw.
(Poland--Industries)
(Poland--Economic conditions)

KIKNADZE, Aleksandr Vasil'yevich; IL'DRYMZADE, Dzh., red.; BAGIROVA, S., tekhn. red.

[Italian diary] Ital'ianskii dnevnik. Baku, Azerneshr, 1961. 76 p. (MIRA 15:7)
(Rome—Olympic games)
(Italy—Description and travel)

[illegible], D. A., Cand Phys-Math Sci -- (diss) "[illegible] of investigating the heat coefficients of rocks," Tbilisi, 19[illegible], 1[illegible] ([illegible] State Univ im I. V. Stalin) (KL, 33-60, 143)

66214
SOV/146-59-1-16/21

~~16(1); 24(0)~~ 24.5200
AUTHORS: Kiknadze, D.A., Post-Graduate Student, and Dul'nev, G.N., Candidate of Physical and Mathematical Sciences

TITLE: The Theoretical Foundation of the Generalized Relation Between the M and H Criteria for Certain Complex Bodies

PERIODICAL: Izvestiya, vysshikh uchebnykh zavedeniy, Priborostroyeniye, 1959, Nr 1, pp 103-109 (USSR)

ABSTRACT: Based on one of the theorems of Professor G.M. Kondrat'yev (Ref.1), who established the relation between the cooling speed m and the heat loss factor α of a body according to the following equation $m = \alpha \frac{S\psi}{C}$, where S and C - heat dissipating surface and full heat capacity of a body; ψ - criterion of temperature field irregularity, the authors investigate the formula

$$M = \frac{H}{\sqrt{H^2 + 1.437H + 1}} . \quad (5)$$

During the past years this formula has been widely used for solving

Card 1/2

~~16(1)~~ 24.7600

AUTHORS: Kiknadze, D.A., Aspirant, and Dul'nev, G.N., Candidate of Physico-Mathematical Sciences

TITLE: Experimental Verification of Generalized Dependence M=M(H) for Solids of Complex Configuration

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy - priborostroyeniye, 1959, Nr 2, pp 134-138 (USSR)

ABSTRACT: It has been established that the generalized dependence between the heat inertia criterion of solids and the criterion Bio H determining the action of outer medium upon a solid is not enough substantiated for solids having a complex form. A theoretical substantiation of the M=M(H) dependence is possible only for a very small clase of solids; that is why experimental basis of this dependence for complex form solids should really be of interest. For an homogeneous solid of any configuration, criteria M and H are connected in the following way:

$$M = \frac{H}{\sqrt{H^2 + 1.437H + 1}} \qquad (1)$$

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Experimental Verification of Generalized Dependence M=M(H) for Solids of Complex Configuration

$$M = \frac{m}{m_\infty} = \frac{m}{a} K, \quad H = \frac{a}{\lambda} \frac{KS}{V} \qquad (2)$$

where m and m_∞ are rates of the solid cooling at finite and infinite values of the solid heat output coefficient α; λ and a are respectively coefficients of heat conductivity and temperature conductivity of the solid; S, V, and K are the heat output surface, volume, and coefficient of the solid's form. There are two methods of experimental verification of M=M(H) dependence: a) A complex configuration solid is considered; its thermical properties, α, λ, and C are known, and it is possible to calculate the values S, V, and K for the given form of the solid. The rate of cooling and the coefficient of heat output of the solid at variable conditions of heat exchange with the surrounding medium are experimentally determined. By means of dependences (2), experimental values of criteria M and H are calculat-

Card 2/4

Experimental Verification of Generalized Dependence M=M(H) for Solids of Complex Configuration

ed and plotted on theoretical graphs of dependence M=M(H) for a sphere and a plate. If the experimental points arrange between these theoretical curves, the generalized dependence for this class of solids is true. b) As in the first case, a complex configuration solid is considered; its parameters α, λ, C (specific heat), S, V and K are known. By using dependence (1), the values of solid's thermal coefficients are determined. If dependence (1) is true for a given class of solids, the experimentally determined values α, λ, and C should coincide with those known from literary sources. As example, the author analyzes two classes of complex configuration solids: 1) A cylinder with entrant angles and 2) a cylinder with an elliptic base. Recommended by the Kafedra teplovykh i kontrol'no-izmeritel'nykh priborov (Chair of Heat- and Control-Measuring Devices). There are 1 graph, 1 diagram, 2 tables and 8 references, 7 of which are Soviet and 1 American.

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SOV/143-59-2-20/23

Experimental Verification of Generalized Dependence M=M(H) for Solids of Complex Configuration

ASSOCIATION: Institut geofiziki AN Gruzinskoy SSR (Institute of Geophysics AS of Georgian SSR); Leningradskiy institut tochnoy mekhaniki i optiki (Leningrad Institute of Precision Mechanics and Optics)

SUBMITTED: February 27, 1959

Card 4/4

KIKNADZE, D.A.

Determining thermal properties of rocks. Trudy Inst. geofiz. AN Gruz. SSR 19:159-166 '60. (MIRA 14:9)
(Rocks--Thermal properties)

KIKNADZE, D.A.

Accuracy of the two-alpha method in determining the thermal coefficients of rocks. Trudy Inst. geofiz. AN Gruz. SSR 21:181-188 '63. (MIRA 18:12)

KIKNADZE, D.A.; IZASHVILI, R.P.; MANEVICH, A.M.; SAGIYEV, S.S.; GISIN, P.G.; Prinimali uchastiye:MALOVITSKIY, V.S.; SOBOLEV, Yu.B.; VASIL'YEV, M.G.; TIMOSHENKO, S.I.

Automatic line for the painting of children's carriages with the jet spraying method; experience in the introduction and use. Lakokras. mat. i ikh prim. no.3:69-75 '63. (MIRA 16:9)
(Spray painting—Equipment and supplies)

KIKNADZE, G.G., inzh.; VOL'FENZON, M.M., inzh.

Pedestrian tunnel at Stantsiya Didube. Transp. stroi. 15 no.5:20-21 My '65. (MIRA 18:7)

Kiknadze, G.I.

3-12-2/27

AUTHOR: Kiknadze, G.I., Dotsent

TITLE: Science in the Higher Schools of the Georgian SSR (Nauka v vysshey shkole Gruzinskoy SSR)

PERIODUCAL: Vestnik Vysshey Shkoly, 1957, # 12, pp 6 - 13 (USSR)

ABSTRACT: The author gives a historical review of the culture in Georgia and deals, in particular, with the development of education during the post-revolution and post-war periods. He states that only at the moment of the October Revolution the cultural development of this country has really begun. Many vuzes including the Georgian State University were opened. At present there are 19 higher educational institutions, 12 of them situated in the Capital, the others are in Kutaisi, Sukhumi, Batumi, Stalinir, Gori and Telavi. Three more vuzes are under construction. The training of a scientific-pedagogical staff was conducted on a large scale. The high standard of Georgian culture and education was reached by preparing qualified teachers who were trained in various pedagogical institutes, as Tbilisi, Kutaisi, Stalinir, Sukhumi, Gori, Batumi, Zugdidi, Telavi, and in correspondence sections of universities and institutes. At the Tbilisi University, e.g. there are the following famous scientific schools: mathematics

Card 1/4

Science in the Higher Schools of the Georgian SSR 3-12-2/27

headed by Academician N.I. Muskhelishvili and Professors A.M. Razmadze, V.D. Kupradze, I.Kh. Vekua; physiology - headed by Academician I.S. Beritashvili; psychology - headed by Professor D.N. Uznadze; history and linguistics - headed by Academicians I.A. Dzhavakhishvili and S.N. Dzhanashia, Professors A.G. Shanidze, G.S. Akhvlediani, A.S. Chikobava; literature - headed by Professor K.S. Kekelidze. The University scientists published more than 1570 scientific works, and 560 textbooks and manuals. Professor A.I. Didebulidze worked on the electrification and mechanization of agriculture, for example the designing of the first electric tractor, a sprinkling system. Scientific workers of the Polytechnic Institute headed by Professor G.A. Tsulukidze thoroughly investigated mining methods for Chiatura manganese. Professor R.I. Agladze, Laureate of the Stalin Prize, elaborated a method of obtaining manganese of high purity. Professor G.N. Nikoladze conducted investigations in the field of metallurgy which resulted in the construction of a test plant and the elaboration of technological schemes, on the basis of which the first metallurgical works in Georgia - the Zestafoni Ferroalloy Works (Zestafonskiy ferrosplavnyy zavod) were constructed. Professor A.M. Razmadze, head of the scientific section of mathematics, organized expanded mathematical researches and the

Card 2/4

ANDRONIKASHVILI, E.L.; BUDA, B.G.; KIKNADZE, G.I.; FEL'DMAN, L.I.; CHANTURIYA, V.M.

Model of a radiative indium-gallium loop for the IRT-2000 reactor at Tbilisi. Atom. energ. 13 no.4:342-349 O '62. (MIRA 15:9)
(Nuclear reactors)

ANDRONIKASHVILI, E.L., akademik; BUDA, B.G.; DEVNOZASHVILI, D.S.; KIKNADZE, G.I.; KITSMARISHVILI, E.S.; TOPSHYAN, L.S.; CHANTURIYA, V.M.

Low-temperature loop of an IRT-2000 reactor. Soob. AN Gruz. SSR 34 no.1:45-52 Ap'64 (MIRA 17:7)

1. AN Gruzinskoy SSR (for Andronikashvili).

L 5071-66 EWT(m)/EWP(t)/EWP(b)/EWA(h) IJP(c) JD/DM
ACC NR: AP5022636 UR/0089/65/019/002/0176/0177
621.039.573

AUTHOR: Kiknadze, G. I.; Gambaryan, V. G.; Litvinov, B. I.; Lyudvigov, R. B.; Razmadze, Z. G.; Fel'dman, L. I.; Chanturiya, V. M. 33 B

TITLE: Indium-gallium radiation loop for pool-type reactors

SOURCE: Atomnaya energiya, v. 19, no. 2, 1965, 176-177

TOPIC TAGS: nuclear research reactor, gamma radiation

ABSTRACT: An abbreviated description of a special indium-gallium loop used in the IRT-2000 research reactor is given. The reactor is operated by the Institute of Physics of the Gruzinskaya SSR Academy of Sciences. The loop does not require a special biological shielding and can be easily manipulated and adjusted to other pool-type reactors. The changes in gamma dose rates are obtained by a translational displacement of the loop frame. The radioactive In^{116} nuclei are generated by leakage neutrons. A radioactivity equivalent to 16 g of radium can be created at a 1000 kw capacity. Thus, a gamma dose rate of about

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ACC NR: AP5022636

0.85 x 10^6 roentgen per hour can be produced in a 10.5 liter irradiated volume. By experimenting with a 5000-kw reactor of IRT-type, the authors proved that it is possible to obtain a source of gamma radiations equivalent to those obtained from 1 x 10^6 to 1.5 x 10^6 grams of radium. The immersion of the loop assembly in the reactor tank is shown in a photo.

ASSOCIATION: none

SUBMITTED: 14Apr65 ENCL: 00 SUB CODE: NP

NO REF SOV: 000 OTHER: 000

Card 2/2 hd

L 2101-66 EWT(m)/EPF(c)/EWA(d)/EWP(t)/EWP(z)/EWP(b) IJP(c) MJW/JD/WB

ACCESSION NR: AP5022637 UR/0089/65/019/002/0177/0178
669.018:669.87:621.039.573

AUTHOR: Kiknadze, G. I.; Zakharov, D. M.; Mel'nikova, L. V.

TITLE: The corrosion resistance of 1Kh18N9T stainless steel and VTI-1 titanium in indium-gallium alloy

SOURCE: Atomnaya energiya, v. 19, no. 2, 1965, 177-178

TOPIC TAGS: stainless steel, titanium, indium alloy, gallium containing alloy, steel corrosion, titanium corrosion, liquid alloy/1Kh18N9T steel, VTI 1 titanium

ABSTRACT: In connection with the building of the RK-II indium-gallium loop at the Institute of Physics, Academy of Sciences Georgian SSR, an investigation was made of the corrosion and erosion behavior of 1Kh18N9T stainless [AISI 321] steel and VTI-1 commercial-grade titanium in a liquid eutectic In-Ga alloy containing 20.5 wt% In and 79.5 wt% Ga. It was found that under conditions of static immersion, the steel did not react with the In-Ga alloy at temperatures up to 250C. But at 320C, an intense chemical interaction between the stainless steel and alloy components resulted in the formation of two layers of intermetallic compounds on the steel surface. The outer layer consisted of a very brittle $FeGa_4$ compound with a bcc lattice (a = 8.36 kX), and the second layer, of an Fe-In compound with a bcc lattice

L 2101-66

ACCESSION NR: AP5022637

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(a = 9.14 kX), which adhered rather strongly to the base metal. The welded joints of 1Kh18N9T steel were less stable than the parent metal and were corroded at 220—250C. VTI-1 titanium parent metal and welds did not react with the In-Ga alloy at temperatures up to 350C. But at 400C, a titanium-indium compound (a γ-phase) with a simple cubic lattice (a = 4.22 Å) was formed on titanium. Also, a small quantity of a Ti_3Ga intermetallic compound with a hexagonal lattice (a = 5.75 Å, c = 4.64 Å) was formed as a result of the interaction of the γ-phase and gallium. An oxide film with a rutile structure or a hydride film on the titanium surface substantially improves corrosion resistance in the In-Ga alloy. Circulating In-Ga alloy at a speed of 10 m/sec produced no erosion of the steel or titanium. However, it promoted their corrosion by lowering the temperature of the beginning of corrosion, e.g., to below 100C for steel welds and to 300C for titanium and titanium welds. In all cases, however, VTI-1 titanium was much more resistant to corrosion in a liquid In-Ga alloy, and should be preferred as a structural material for indium-gallium loops. [MS]

ASSOCIATION: none

SUBMITTED: 22Apr65 ENCL: 00 SUB CODE: MM

NO REF SOV: 000 OTHER: 000 ATD PRESS: 4113

Card 2/2

L 3591-66 EWT(m)/EPF(c)/ETC/EPF(n)-2/EWP(t)/EWP(b)/EWG(m) EJP(c) JD/WW

ACCESSION NR: AP5022638 UR/0089/65/019/002/0178/0178
669.018:668.87:621.039.573

AUTHOR: Kiknadze, G. I.; Desipri, A. I.; Zakharov, D. M.; Mel'nikova, L. V. 36 B

TITLE: Indium-gallium alloy as a γ-carrier for radiation circuits

SOURCE: Atomnaya energiya, v. 19, no. 2, 1965, 178

TOPIC TAGS: reactor, carrier, gamma carrier, radiation circuit, indium gallium alloy, indium, gallium

ABSTRACT: The Institute of Physics, Georgian Academy of Sciences, has used an In-Ga alloy containing 24.5 wt% In as a γ-carrier for the radiation circuit of an IRT-2000 reactor. After 1000 hr operation it was found that the In content in the alloy decreased by 2 wt%. An indium-base solid phase was found in the circuit joints. Thus, In-Ga alloy with 24.5 wt% In is unstable and contains excessive In. Laboratory tests and tests under production conditions with another alloy containing 22.5% In produced similar results. Only alloy with 20.5 wt% In was found to be suitable as a γ-carrier for radiation circuits at temperatures as low as 13C. This alloy has a viscosity of $2.5 \cdot 10^{-2}$ P at room temperature and a density of 6.3 g/cm^3. [WW]

ASSOCIATION: none

Card 1/2

Card 2/2

MIKELADZE, A.L.; KIKNADZE, G.I.

Study of the efferent connections of the parietal region of the brain. Soob. AN Gruz. SSR 38 no.2:441-447 My '65. (MIRA 18:9)

1. Institut fiziologii AN GruzSSR. Submitted August 10, 1964.

KIKNADZE, G.S.

Effect of a thermal injury upon the intensity of chlorophyll fluorescence in the leaves of Tradescantia. TSitologiia 7 no.2:197-204 Mr-Ap '65. (MIRA 18:7)

1. Laboratory [illegible] Institute [illegible], Leningrad.

KIKNADZE, G.S.

Apparatus for measuring the intensity of fluorescence of a microscopic preparation. Izv. Sib. otd. AN SSSR no.3:124-125 '62. (MIRA 17:7)

1. Institut tsitologii i genetiki Sibirskogo otdeleniya AN SSSR, Novosibirsk.

KIKNADZE, G. S.

KIKNADZE, G. S. - "The results of studying the phylogeny of the Umbelliferae Koriа, using the anatomic structure of the vegetative organs". Leningrad, 1955. Acad Sci USSR, Botanical Inst imeni Komarov. (Dissertation for the Degree of Candidate of Biological Sciences).

SO: Knizhnaya Letopis' No. 46, 12 November 1955. Moscow

KIKNADZE, G.S.

Fluorescent microscopic investigation of chlorophyll in the leaves of Campanula persicifolia L. during varying injurious actions. TSitologiia 2 no.2:144-152 Mr-Ap '60. (MIRA 14:5)

1. Laboratoriya tsitofiziologii i tsitoekologii Botanicheskogo instituta AN SSSR, Leningrad.
(FLUORESCENCE MICROSCOPY) (CAMPANULA) (CHLOROPHYLL)

KIKNADZE, Georgiy Sergeyevich; BUSHUYEVA, V.M., red.; MAZUROVA, A.F., tekhn. red.

[Tables for determining the genera of Umbelliferae Moris of the U.S.S.R. based on leaves and petioles] Tablitsy dlia opredeleniia rodov zontichnykh (Umbelliferae Moris) SSSR po list'iam i chereshkam. Novosibirsk, Izd-vo Sibirskogo otd-niia AN SSSR, 1962. 63 p. (MIRA 16:5)
(Umbelliferae)

KIKNADZE, I. I.

KIKNADZE, I. I.: "Cytochemical investigation of the behavior of nucleic acids during fertilization and early ontogenesis of certain invertebrates." Leningrad, 1955. Leningrad Order of Lenin State U imeni A. A. Zhdanov. (Dissertation for the Degree of Candidate of Biological Science)

SO: Knizhnaya Letopis' No. 47, 19 November 1955. Moscow.

KIKNADZE, I. I.

USSR/ Biology - Cytology

Card 1/1 Pub. 22 - 45/54

Authors : Kiknadze, I. I.

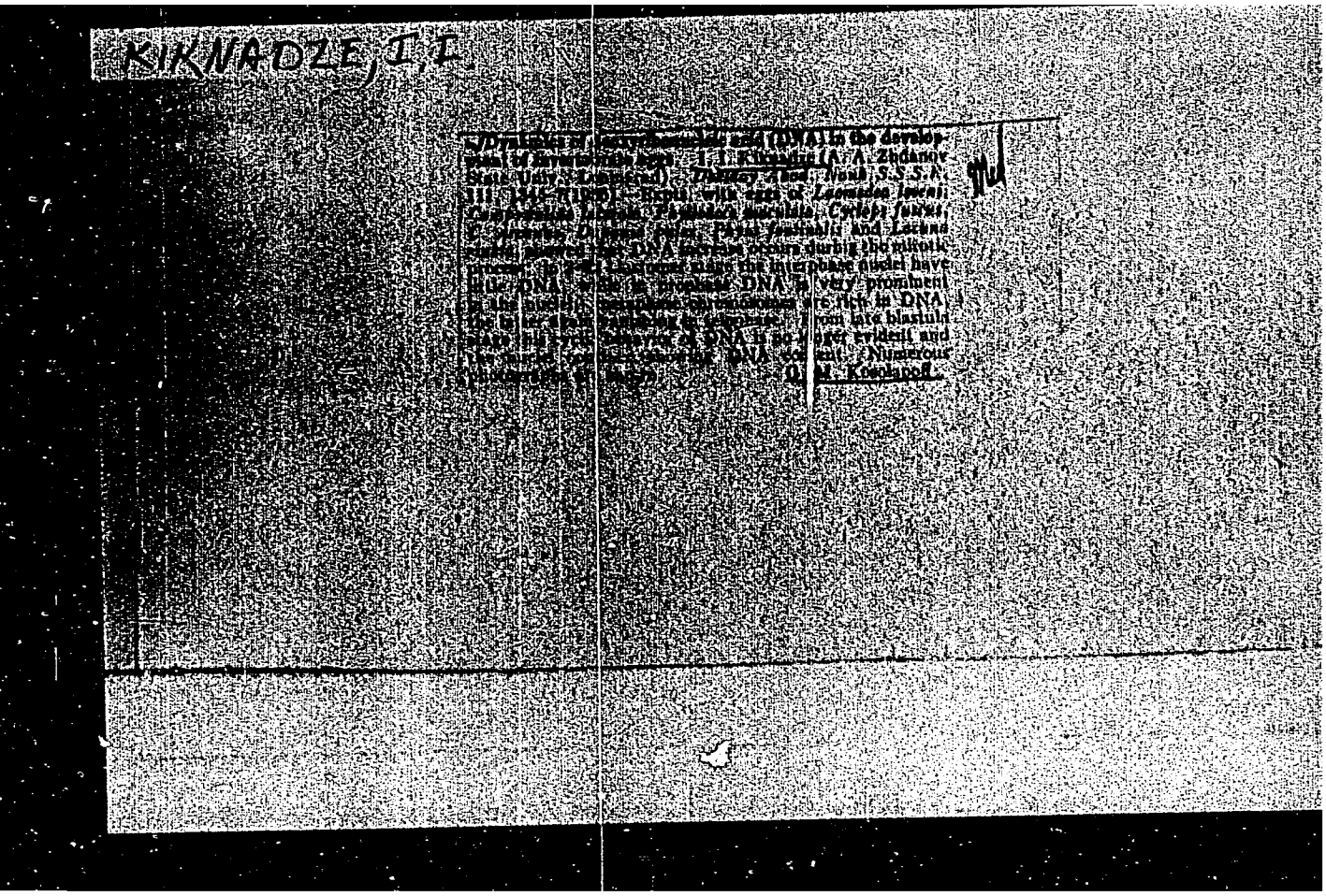
Title : Nucleinic acid changes during the fecundation and development of the cyclops egg

Periodical : Dok. AN SSSR 100/3, 571-574, Jan 21, 1955

Abstract : Biological data are presented regarding the nucleinic acid changes occurring during the fecundations and the embryonal development of a cyclops egg. Eight references: 6 USSR, 1 USA and 1 French (1944-1951). Illustrations.

Institution : The A. A. Zhdanov State University, Leningrad

Presented by : Academician E. N. Pavlovskiy, November 23, 1954



USSR / General Biology. Individual Development. B-4

Abs Jour : Ref Zhur - Biol., No 11, 1958, No 47569

Author : Kilmadze, I. I.
Inst : Academy of Sciences USSR
Title : Cytochemical Investigation of RNA in Developing Eggs of Some Invertebrates.

Orig Pub : Doklady Akad Nauk SSSR, 112, No 1, 133-136 (1957)

Abstract : RNA and DNA were studied by the method of Brachet. The tissues were fixed according to Karnua. The experimental material included eggs from several varieties of hydroida, polychaeta, crustacea, and gastropoda, and ranged from the fertilized or parthenogenetic ovum stage through the gastrula stage. The RNA content in all cases was found to be directly proportional to the amount of active cytoplasm present. The RNA content is marked in rapidly cleaving cyclops, daphne (parthenogenetic), and Physa. Phyllodoce eggs and

Card 1/2

USSR / General Biology. Individual Development. B-4

Abs Jour : Ref Zhur - Biol., No 11, 1958, No 47569

Abstract : small in the less rapidly cleaving eggs of Lacuna, daphne (fertilized), and hydroida. Changes in RNA content in the RNA-rich eggs could not be detected up to the gastrula stage with the method used by the author. In initially RNA-poor eggs a gradual accumulation of RNA is observed during the growth period. No evidence of RNA-DNA interconversion could be obtained. The author expresses the opinion that notwithstanding the theory of Brachet these two acids are synthesized by independent paths.

Card 2/2

AUTHOR: Kiknadze, I. I. 30V/20-120-3-57/67

TITLE: The Nucleolar Apparatus in the Oogenesis of Cyclops (Nukleolyarnyy apparat v oogeneze tsiklopov)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 120., Nr 3, pp. 644 - 646 (USSR)

ABSTRACT: In spite of many investigations the nucleolus has up to now been the least researched component of the cell nucleus. The main questions which have drawn the attention to the nucleolus during the last years, are: The investigation of its role in the protein synthesis in the cell (Reference 1), on the one hand, and the discovery of its finestructure for the purpose of the determination of the part it plays in hereditary transmission (References 2,3), on the other hand. A survey of the competent works (References 4-11) is given. At the moment the author restricts himself to the problem of the existence of a thread-structure of objects which have not been investigated with regard to that question. Female sex cells of Cyclops viridis, C. strenuus and C. insignis were used for this purpose. Based upon the results, the conclusion can be drawn that in the

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nucleoli of the oocytes in cyclops in all stages of development a thread-structure can be found by means of special methods, which is morphologically very similar to the nucleoma, described in publications. At the moment the author is not able to give a certain information on the further fate of that structure. It is true that the observations, made so far, show in the case of cyclop-bivalents during diacinesis and meta phase of the first maturity division argentophile structures becoming visible, which are similar to the threads of the nucleolus. During the whole period of the small and big growth, sufficient ribonucleic acid is in the nucleoli of the oocytes and it is distributed diffusely. The nucleoli need not absolutely contain ribonucleic acid, as it is proved by some authors (Reference 12). Finally it must be mentioned that the shape of the nucleolus is variable according to life conditions in the course of the ontogenesis (table 1). There are 2 figures, 1 table and 12 references, 3 of which are Soviet.

The Nucleolar Apparatus in the Oogenesis of Cyclops SOV20-120-3-57/67

ASSOCIATION: Institut tsitologii Akademii nauk SSSR (Institute for Cytology, AS USSR)

PRESENTED: February 19, 1958, by Ye. N. Pavlovskiy, Member, Academy of Sciences, USSR

SUBMITTED: February 10, 1958

1. Nuclei (Biology)---Analysis 2. Nuclei (Biology)---Genetic factors
3. Proteins--Biosynthesis 4. Nucleic acids---Biosynthesis

Card 3/3

KIKNADZE, I. I.

"Ribonucleoprotein Metabolism of the Chromosomes and the Formation of the Nucleolus."

report submitted for the First Conference on the problems of Cyto and Histochemistry, Moscow, 19-21 Dec 1960.

Institute of Cytology and Genetics of the Siberian Division, Academy of Sciences USSR, Novosibirsk.

KIKNADZE, I. I., DREVICH, V. F., GUBENKO, I. S., DADYKINDA, N. V., SALGANIK, R. I., MOROZOVA, T. N.

"Pyroninophilic Granules of Fractions Isolated Cellular Nuclei"

report submitted for the First Conference on the problems of Cyto and Histochemistry, Moscow, 19-21 Dec 1960.

Institute of Cytology and Genetics, Siberian Division Academy of Sciences USSR, Novosibirsk.

KIKNADZE, I.I.

Ribonucleic acid content and localization in chromosomes. Izv.Sib. otd.AN SSSR no.9:136-144 '60. (MIRA 13:11)

1. Institut tsitologii i genetiki Sibirskogo otdeleniya AN SSSR.
(Nucleic acids) (Chromosomes)

ZARIDZE, G.M.; KAZAKHASHVILI, T.G.; KIKNADZE, I.I.

Example of metasomatic granitization. Izv. vys. ucheb. zav.; geol. i razv. no.11:68-70 N '60. (MIRA 14:2)

1. Gruzinskiy politekhnicheskiy institut im. V.I. Lenina.
(Granitization)

KIKNADZE, I.I.; FILATOVA, I.T.

Functional changes in the ribonucleic acid content of nuclei of the salivary glands of Cyironomus dorsalis during metamorphosis. Izv. Sib.otd.AN SSSR no.12:130-134 '60. (MIRA 14:2)

1. Institut tsitologii i genetiki Sibirskogo otdeleniya AN SSSR.
(SALIVARY GLANDS) (NUCLEIC ACIDS)

BELYAYEVA, Ye.S.; KIKNADZE, I.I.

Studying the nucleolonema in the mitosis and meiosis in Lilium. Izv. Sib. otd. AN SSSR no.7:92-97 '61. (MIRA 14:8)

1. Institut tsitologii i genetiki Sibirskogo otdeleniya AN SSSR, Novosibirsk.
(Karyokinesis) (Lilies)

KIKNADZE, I.I.

Interaction of the nucleolus and chromosomes. TSitologiia 3 no. 1:3-19 Ja-F '61. (MIRA 14:2)

1. Laboratoriya obshchey tsitologii Instituta tsitologii i genetiki Sibirskogo otdeleniya AN SSSR, Novosibirsk.
(CELL NUCLEI)

KHVOSTOVA, V.V.; KIKNADZE, I.I.; FILATOVA, I.T.

Nucleic acids in cells of the meristem of rootlets of pea varieties with varying radiosensitivity. TSitologiia 3 no. 2:183-188 Mr-Ap '61. (MIRA 14:4)

1. Laboratoriya radiatsionnoy genetiki Instituta biofiziki AN SSSR, Moskva i Laboratoriya obshchey tsitologii Instituta tsitologii i genetiki Sibirskogo otdeleniya AN SSSR, Novosibirsk.
(NUCLEIC ACIDS) (PLANTS, EFFECT OF RADIOACTIVITY ON) (PEAS)

KIKNADZE, I.I.

Nucleolonema in the nucleoli of interstage cells and in mitosis. TSitologiia 3 no.5:522-527 S-O '61. (MIRA 14:10)

1. Laboratoriya obshchey tsitologii Instituta tsitologii i genetiki Sibirskogo otdeleniya AN SSSR, Novosibirsk.
(CELL NUCLEI) (KARYOKINESIS)

BELYAYEV, D.K.; KIKNADZE, I.I.; SHERUDILO, A.I.

Cytophotometric determination of the amount of desoxyribonucleic acid in the sexual cells of various genotypes. Dokl. AN SSSR 143 no.4:958-960 Ap '62. (MIRA 15:3)

1. Institut tsitologii i genetiki Sibirskogo otdeleniya AN SSSR. Predstavleno akademikom V.A.Engel'gardtom.
(DESOXYRIBONUCLEIC ACID) (SPERMATOZOA)

KIKNADZE, I.I.

Existence of an [illegible] at the early stages of observers.
TSitologiia 5 no.3:319-323 My-Je '63. (MIRA 17:5)

1. Laboratoriya [illegible] Institute [illegible]
genetiki Sibirskogo otdeleniya AN SSSR, Novosibirsk.

GRUZDEV, A.D.; KIKNADZE, I.I.

Effect of ultraviolet microirradiation on a plant cell. Tsitologiia 5 no.5:585-587 S-O '63. (MIRA 17:4)

1. Laboratoriya obshchey tsitologii Instituta tsitologii i genetiki Sibirskogo otdeleniya AN SSSR, Novosibirsk.

KIKNADZE, I.I.; FILATOVA, I.T.

RNA changes in the giant chromosomes of Chironomus dorsalis during metamorphosis and under experimental treatments.
Dokl. AN SSSR 152 no.2:450-453 S '63. (MIRA 16:11)

1. Institut tsitologii i genetiki Sibirskogo otdeleniya AN SSSR.
Predstavleno akademikom V.A. Engel'gardtom.

KIKNADZE, I.I.

Study of nucleoreme during various functional states of the cell. Izv. Sib. otd. AN SSSR no.5:87-92 '62. (MIRA 18:2)

1. Institut tsitologii i genetiki Sibirskogo otdeleniya AN SSSR, Novosibirsk.

KOROCHKIN, Leonid Ivanovich; KIKNADZE, I.I., otv. red.

[Differentiation and aging of the vegetative neuron] Differentsirovka i starenie vegetativnogo neirona. Moskva, Nauka, 1965. 185 p. (MIRA 18:8)

SALGANIK, R.I.; KIKNADZE, I.I.; MOROZOVA, T.M.; GUBENKO, I.S.; DREVICH, V.F.

Nature of pyronin-stained granules in a fraction of isolated cell nuclei. TSitologiia 5 no.5:499-505 S-O '62. (MIRA 18:5)

1. Laboratoriya nukleinovykh kislot i Laboratoriya obshchey tsitologii Instituta tsitologii i genetiki Sibirskogo otdeleniya AN SSSR, Novosibirsk.

KIKNADZE, I.I.

Functional changes of giant chromosomes under the influence of inhibited RNA synthesis. TSitologiia 7 no.3:311-318 My-Je '65. (MIRA 18:10)

1. Laboratoriya obshchey tsitologii Instituta tsitologii i genetiki Sibirskogo otdeleniya AN SSSR, Novosibirsk.

SEBELEVA, T.Ye.; SHERUDILO, A.I.; KIKNADZE, I.I.

Quantitative determination of DNA during puff formation in Chironomus dorsalis. Genetika no.2:103-105 Ag '66.
(MIRA 18:10)

1. Institute of Cytology and Genetics, Academy of Sciences of the U.S.S.R., Siberian Department, Novosibirsk.

[illegible], [illegible], [illegible]

[illegible] of the nucleolus in early embryogeny. Genetika [illegible] '65. ([illegible])

1. [illegible] [illegible] Submitted [illegible]

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000722520007-6"

KIKNADZE, I.I.

Petrochemical characteristics of young intrusive rocks in the upper Tskhenis-Tskali Valley (lower Svanetiya). Trudy Geol.-inst.AN Gruz.SSR. Min. i petr. ser. 6:137-144 '61. (MIRA 15:9)
(Tskhenis-Tskali Valley--Rocks, Igneous)

ZARDIZE, G.M.; KAZAKHASHVILI, T.G.; KIKNADZE, I.I.; MANVELIDZE, R.M.

Structural and petrological features of ancient crystalline rocks in the Northern Caucasus. Sov.geol. 5 no.2:29-36 F '62.(MIRA 15:2)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova i Gruzinskiy politekhnicheskiy institut imeni V.I.Lenina.
(Caucasus, Northern--Rocks, Crystalline and metamorphic)

KIKNADZE, L. G.

Kiknadze, L. G.

"Subharmonic Oscillations in an Electrical Cirucit with Steel." Acad Sci USSR. Power Engineering Inst imeni G. M. Krzhizhanovskiy. Acad Sci USSR. Moscow, 1955. (Dissertation for the Degree of Candidate in Technical Sciences.)

SO: Knizhnaya Letopis', No. 27, 2 July 1955

S/774/60/001/000/012/012

AUTHORS: Kiknadze, L. G., Lopatnikova, T. M.

TITLE: Investigation of the second stage of the magnetic decoder for the memory of the БЭСМ (BESM) -2 computer.

SOURCE: Akademiya nauk Gruzinskoy SSR. Vychislitel'nyy tsentr. Trudy. v. I. 1960, 283-295.

TEXT: The paper describes the design problems involved in the making of a dependable operative memory-storage unit for high-speed computers. The utilization of magnetic materials, namely, ferrites, having a rectangular hysteresis loop (RHL), has made possible a great step forward in the solution of this problem. The paper describes the current Soviet memory unit based on the use of ferrites, designed according to the so-called "Z" principle, which offers an advantage over the matrix-type by the unbounded intensity of the counting current which permits the forced magnetic polarity reversal (MPR) of the memory core and which provides means for obtaining a high-amplitude signal through an elevated rate of change of the flux, $d\Phi/dt$. The Z-type memory is described in detail. In order that the load of the coordinate transformer and, consequently, its output current remain constant and do not change as a function of the code, a load stabilization is applied. For that

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purpose the Z-type memory equipment developed at the ITMiVT (Institute of Precision Mechanics and Computer Engineering), AS USSR, is equipped with a method of load stabilization by means of compensation cores. In that instance every cell that contains the code of a single digit of a binary number consists of two cores, an operating and a compensating one. The functioning of such a cell is described. A description and schematic diagram is shown of the design of the control equipment of a memory cube for 4,096 numbers. The proposed magnetic decoder comprises an ordinary network of transformers operating in a switching mode. It has 8 inputs on each side and 64 outputs. Upon excitation of one of the 6 X-buses and also Y-buses, a MPR occurs in the decoder in the one transformer that lies on the intersection of the excitation currents, and the desired channel current is issued into the network from the coordinate transformers. At that time, 7 transformers along each axis will be semiexcited and will issue noise currents. Two such decoders are needed. A solution leading to a more satisfactory result is shown in a "cross"-solution consisting of 8 series-connected transformers for each coordinate x and y. Details of the circuitry are explained and depicted graphically. The intensity of the resulting signals, both of negative polarity (code "1") and of positive polarity (code "0") lie between 400 and 600 mv, that is, within the range prescribed by the Engineering Specifications for the signals from the memory cube of the BESM-2 machine. Changes in the frequency of 100 kcps and below do not affect the intensity of the

signals in the memory block. The application of this supplementary magnetic decoder in the control of the magnetic operative memory-storage unit provides a significant decrease in the amount of equipment and facilitates the operation of the equipment. 500 tubes were eliminated, thereby reducing the operating cost by about one-half; naturally, the dependability of the remaining equipment was increased thereby. The experimental equipment described here serves as a prototype for the construction of an industrial model. Thanks are expressed to Group Engineer A. S. Fedorov for his valuable advice. There are 11 figures and 2 Russian-language Soviet references.

SUBMITTED: 5 April 1959.

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S/044/61/000/012/010/054
C111/C333

16.3000

AUTHOR: Kiknadze, L. S.

TITLE: On the variation of a function which conformally maps a circle onto a domain

PERIODICAL: Referativnyy zhurnal, Matematika, no. 12, 1961, 17-18, abstract 12B67. ("Tr. Vychisl. tsentra. AN Gruz SSR", 1960, 1, 63-74)

TEXT: Let the simply connected domain D(C) of the z-plane be bounded by the simple closed smooth curve C with the length l. Let $\varphi(s)$ be an arbitrary continuous, twice continuously differentiable periodic function with the period l; let ε be a sufficiently small positive number. Let $D(C_\varepsilon)$ denote a simply connected domain with the boundary C_ε arising from C if each point M(s) of C is displaced by $\varepsilon\varphi(s)$ along the interior normal of C in the point M(s).

The following theorem is proved: If $f(\zeta)$ and $f_2(\zeta)$ are functions which schlicht and conformally map D(C) and $D(C_\varepsilon)$ onto the circle $|\zeta| < 1$, and if $f(0) = f_\varepsilon(0) = z_0$, $z_0 \in D(C) \cap D(C_\varepsilon)$, $f'(0) > 0$, $f_\varepsilon(0) > 0$, then

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On the variation of a function which ...

the relation

$$f_\varepsilon(\zeta) = f(\zeta) - \frac{\varepsilon}{2\pi}\zeta f'(\zeta)\int_0^{2\pi}\frac{1+\zeta e^{-it}}{1-\zeta e^{-it}}\frac{\rho(s(t))}{|f'(e^{it})|}\,dt + \\ + R(\varepsilon;\zeta),$$

holds, where $\lim_{\varepsilon \to 0} \frac{R(\varepsilon;\vartheta)}{\varepsilon} = 0$ uniformly in $|\vartheta| < 1$.

[Abstracter's note: Complete translation.]

Card 2/2

KIKNADZE, L.S.

Approximate solution of the second fundamental boundary problem of the plane theory of elasticity for near regions. Soob. AN Gruz. SSR 27 no.5:521-528 N '61. (MIRA 15:1)

1. Akademiya nauk Gruzinskoy SSR, Institut kibernetiki, Tbilisi. Predstavleno akademikom I.N. Vekua.
(Elasticity)

L 61043-65 EWT(l)/EWT(m)/EWP(t)/EWP(b)/EPF(c) Pr-4 LJP(c) JD

ACCESSION NR: AP5013912 UR/0056/65/048/005/1520/1525

41
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B

AUTHOR: Kiknadze, L. V.; Mamaladze, Yu. G.; Cheyshvili, O. D.

TITLE: Concerning the vortex structure of rotating helium

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 5, 1965, 1520-1525

TOPIC TAGS: rotating helium, quantum liquid, superfluidity, quantum vortex, Onsager Feynman vortex

ABSTRACT: The rotation of superfluid liquid helium and its interaction with the motion of the Onsager-Feynman vortex filaments is considered on the basis of the phenomenological theory of liquid helium developed by V. L. Ginzburg and L. P. Pitayevskiy (ZhETF v. 34, 1240, 1958 and later papers by Pitayevskiy). It is shown, by analysis of the equations for the equilibrium rotation of liquid helium in a sufficiently large vessel, that the two-dimensional network of vortices produced in the rotating liquid helium can rotate about the axis of rotation of the normal component (the vessel). In fact, this is the only way in which it is possible to avoid the energy dissipation that is inevitable when there is relative motion between the vortices and the normal liquid in the helium. It is shown further that regions where the superfluid rotation is directly opposite to the rotation of the vessel exist in

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ACCESSION NR: AP5013912

the volume between the vortices. Extensive use is made of the analogy between the equations of motion of the superfluid, and the equations of the Ginzburg-Landau theory, used by A. A. Abrikosov (ZhETF v. 32, 1442, 1957), to explain the properties of superconductors of the second kind. This property of networks of quantum vortices is indicative of the principal difference between the wave function phases and the velocity potentials of the networks of geometrically identical classical and quantum vortices. This difference accounts for the capacity of the quantum vortices to create a rigid two-dimensional network. Orig. art. has: 14 formulas.

ASSOCIATION: Institut fiziki Akademii nauk Gruzinskoy SSR (Institute of Physics, Academy of Sciences, Georgian SSR)

SUBMITTED: 26Dec64 ENCL: 00 SUB CODE: ME, IC

NR REF SOV: 007 OTHER: 005

Card 2/2

L 21806-66 EWT(m)/EWP(t) IJP(c) JD

ACC NR: AP6012181 SOURCE CODE: UR/0386/66/003/008/0305/0309

AUTHOR: Kiknadze, L. V.; Mamaladze, Yu. G.; Chyshvili, O. D.

ORG: Institute of Physics, Academy of Sciences, Georgian SSR (Institut fiziki Akademii nauk Gruzinskoy SSR)

TITLE: State of liquid helium in the vicinity of the λ line

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 3, no. 8, 1966, 305-309

TOPIC TAGS: liquid helium, quantum liquid, superfluidity, critical point

ABSTRACT: The authors consider a vessel filled with liquid helium, such that at a certain depth the pressure corresponds to the λ line, and prove that contrary to expectations, the liquid helium should actually be either superfluid throughout or normal throughout. The proof is obtained by showing that the equation of the phenomenological superfluidity theory of Ginzburg and Pitayevskiy (ZhETF v. 34, 1240, 1958) admits of a nonzero solution, defined in the entire vessel. This means in turn that superfluidity is possible in the "normal" region, and under certain critical conditions the liquid remains normal even in the "superfluid" region. Since the rigorous proof entails certain mathematical difficulties, the authors

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L 21806-66

ACC NR: AP6012181

merely confirm their conclusions by means of an approximate calculation, which is valid in the particular case of an "infinitely" deep "normal" region, covered by a "thin" superfluid layer. The critical thickness of the "superfluid" layer over the "infinitely" deep "normal" region is estimated at $\approx 2.2 \times 10^{-3}$ cm. The shift of the λ point, due to the external pressure, is estimated. Orig. art. has: 8 formulas.

SUB CODE: 20/ SUBM DATE: 31Jan66/ ORIG REF: 003/ OTH REF: 001

Card 2/2 PB

KIKNADZE, Mikhail Gerontʹyevich; FILATOV, Lev Ivanovich; OSIPOV, I.A., redaktor; VOLKOVA, V.Ye., tekhnicheskiy redaktor.

[Moscow sky; history of an antiaircraft artillery unit] Nebo Moskvy; iz istorii gvardeiskoi zenitno-artilleriiskoi chasti. Moskva, Voen.izd-vo M-va obor.SSSR, 1957. 116 p. (MIRA 10:11)
(Antiaircraft artillery)

ANUFRIYEV, V.; KIRILLOVA, G.; KIKNADZE, N.; CHERVYAKOVA, L.S., red.; VOLKOVA, V.G., tekhn. red.

[Sauces, spices] Sousy, spetsii. Moskva, Izd-vo "Ekonomika," 1964. 151 p. (MIRA 17:4)

KARTVELISHVILI, Yuriy Lavrent'yevich; GUDADZE, Georgiy Iosifovich; KIKNADZE, Nodar Aleksandrovich: KIPIANI, Tornike Terent'yevich; SUTIDZE, Liana Nikolayevna; BEZHANOV, Tigran Vladimirovich

[Principles of designing machinery for earthwork] [Osnovy proektirovaniia mashin dlia zemlianykh rabot. Tbilisi, Gos.izdvo "TSodna"] 1964. 236 p. [In Georgian] (MIRA 17:4)

KIKNADZE, O.A.

Elastic clutch for the KT6 compressor. Elek. i tepl. tiaga no.5: 23 My '63. (MIRA 16:8)

(Clutches(Machinery)) (Compressors)
(Electric locomotives—Maintenance and repair)

KIKNADZE, Z.Z.; MIKHA, M.

Characteristics of the development of the Gyumis karst sink of the Arabika Massif. Soob. AN Gruz. SSR 32 no.3:343-348 Ap '63. (MIRA 18:9)

1. Speleologicheskaya komissiya AN Gruzinskoy SSR. Submitted December 28, 1962.

KIKNADZE, T.Z.

Work of the Speleological Commission of the Academy of Sciences of the Georgian S.S.R. Peshchery no.3:106-109 '63.
(MIRA 18:2)

1. Uchenyy sekretar' Speleologicheskoy komissii AN Gruzinskoy SSR.

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